

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Polynomial Operations EXAM (version 141)

1. Let polynomials  $p(x)$  and  $q(x)$  be defined below.

$$p(x) = -2x^5 - 10x^4 + 4x^2 + 5x + 7$$

$$q(x) = -6x^5 - 2x^3 + 3x^2 + x + 9$$

Express the difference  $q(x) - p(x)$  in standard form.

2. Let polynomials  $a(x)$  and  $b(x)$  be defined below.

$$a(x) = 5x^2 + 6x - 4$$

$$b(x) = 2x - 8$$

Express the product  $a(x) \cdot b(x)$  in standard form.

3. Express  $(x + 1)^4$  in standard (expanded) form.

## Polynomial Operations EXAM (version 141)

4. Let polynomials  $f(x)$  and  $g(x)$  be defined below.

$$\begin{aligned}f(x) &= -2x^3 - 15x^2 + 27x + 7 \\g(x) &= x + 9\end{aligned}$$

The quotient of  $\frac{f(x)}{g(x)}$  can be expressed as a polynomial,  $h(x)$ , and a remainder,  $R$  (a real number).

$$\frac{f(x)}{g(x)} = h(x) + \frac{R}{x+9}$$

By using synthetic division or long division, express  $h(x)$  in standard form, and find the remainder  $R$ .

5. Let polynomial  $f(x)$  still be defined as  $f(x) = -2x^3 - 15x^2 + 27x + 7$ . Evaluate  $f(-9)$ .

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Polynomial Operations EXAM (version 142)

1. Let polynomials  $p(x)$  and  $q(x)$  be defined below.

$$p(x) = -8x^5 - 3x^3 - 2x^2 + 6x + 7$$

$$q(x) = -6x^5 + 8x^4 - 5x^3 - 9x^2 + 1$$

Express the difference  $q(x) - p(x)$  in standard form.

2. Let polynomials  $a(x)$  and  $b(x)$  be defined below.

$$a(x) = -8x^2 + 3x - 5$$

$$b(x) = 7x - 5$$

Express the product  $a(x) \cdot b(x)$  in standard form.

3. Express  $(x + 1)^5$  in standard (expanded) form.

## Polynomial Operations EXAM (version 142)

4. Let polynomials  $f(x)$  and  $g(x)$  be defined below.

$$\begin{aligned}f(x) &= 2x^3 + 10x^2 - 7x - 29 \\g(x) &= x + 5\end{aligned}$$

The quotient of  $\frac{f(x)}{g(x)}$  can be expressed as a polynomial,  $h(x)$ , and a remainder,  $R$  (a real number).

$$\frac{f(x)}{g(x)} = h(x) + \frac{R}{x+5}$$

By using synthetic division or long division, express  $h(x)$  in standard form, and find the remainder  $R$ .

5. Let polynomial  $f(x)$  still be defined as  $f(x) = 2x^3 + 10x^2 - 7x - 29$ . Evaluate  $f(-5)$ .

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Polynomial Operations EXAM (version 143)

1. Let polynomials  $p(x)$  and  $q(x)$  be defined below.

$$p(x) = 4x^5 - 8x^4 + x^3 - 10x^2 + 9$$

$$q(x) = -6x^5 + 3x^4 - 2x^2 - 8x - 7$$

Express the sum of  $p(x) + q(x)$  in standard form.

2. Let polynomials  $a(x)$  and  $b(x)$  be defined below.

$$a(x) = -2x^2 + 6x - 9$$

$$b(x) = -3x - 4$$

Express the product  $a(x) \cdot b(x)$  in standard form.

3. Express  $(x + 1)^6$  in standard (expanded) form.

## Polynomial Operations EXAM (version 143)

4. Let polynomials  $f(x)$  and  $g(x)$  be defined below.

$$\begin{aligned}f(x) &= -3x^3 + 17x^2 - 10x + 4 \\g(x) &= x - 5\end{aligned}$$

The quotient of  $\frac{f(x)}{g(x)}$  can be expressed as a polynomial,  $h(x)$ , and a remainder,  $R$  (a real number).

$$\frac{f(x)}{g(x)} = h(x) + \frac{R}{x - 5}$$

By using synthetic division or long division, express  $h(x)$  in standard form, and find the remainder  $R$ .

5. Let polynomial  $f(x)$  still be defined as  $f(x) = -3x^3 + 17x^2 - 10x + 4$ . Evaluate  $f(5)$ .

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Polynomial Operations EXAM (version 144)

1. Let polynomials  $p(x)$  and  $q(x)$  be defined below.

$$p(x) = -8x^5 - x^4 + 3x^3 - 7x - 9$$

$$q(x) = -5x^5 - 7x^4 - 3x^3 + 10x^2 - 9$$

Express the difference  $p(x) - q(x)$  in standard form.

2. Let polynomials  $a(x)$  and  $b(x)$  be defined below.

$$a(x) = 2x^2 - 6x - 5$$

$$b(x) = -6x + 3$$

Express the product  $a(x) \cdot b(x)$  in standard form.

3. Express  $(x + 1)^6$  in standard (expanded) form.

## Polynomial Operations EXAM (version 144)

4. Let polynomials  $f(x)$  and  $g(x)$  be defined below.

$$\begin{aligned}f(x) &= -2x^3 + 17x^2 + 11x - 28 \\g(x) &= x - 9\end{aligned}$$

The quotient of  $\frac{f(x)}{g(x)}$  can be expressed as a polynomial,  $h(x)$ , and a remainder,  $R$  (a real number).

$$\frac{f(x)}{g(x)} = h(x) + \frac{R}{x - 9}$$

By using synthetic division or long division, express  $h(x)$  in standard form, and find the remainder  $R$ .

5. Let polynomial  $f(x)$  still be defined as  $f(x) = -2x^3 + 17x^2 + 11x - 28$ . Evaluate  $f(9)$ .

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Polynomial Operations EXAM (version 145)

1. Let polynomials  $p(x)$  and  $q(x)$  be defined below.

$$p(x) = -4x^5 - x^4 - 5x^2 + 7x - 9$$

$$q(x) = 8x^5 - 6x^4 + 5x^3 - 2x^2 + 1$$

Express the sum of  $p(x) + q(x)$  in standard form.

2. Let polynomials  $a(x)$  and  $b(x)$  be defined below.

$$a(x) = -6x^2 + 3x - 2$$

$$b(x) = -3x + 6$$

Express the product  $a(x) \cdot b(x)$  in standard form.

3. Express  $(x + 1)^5$  in standard (expanded) form.

## Polynomial Operations EXAM (version 145)

4. Let polynomials  $f(x)$  and  $g(x)$  be defined below.

$$\begin{aligned}f(x) &= 2x^3 + 17x^2 + 11x + 21 \\g(x) &= x + 8\end{aligned}$$

The quotient of  $\frac{f(x)}{g(x)}$  can be expressed as a polynomial,  $h(x)$ , and a remainder,  $R$  (a real number).

$$\frac{f(x)}{g(x)} = h(x) + \frac{R}{x+8}$$

By using synthetic division or long division, express  $h(x)$  in standard form, and find the remainder  $R$ .

5. Let polynomial  $f(x)$  still be defined as  $f(x) = 2x^3 + 17x^2 + 11x + 21$ . Evaluate  $f(-8)$ .

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Polynomial Operations EXAM (version 146)

1. Let polynomials  $p(x)$  and  $q(x)$  be defined below.

$$p(x) = 8x^5 + 4x^4 + 10x^3 - 3x^2 + 5$$

$$q(x) = 10x^5 - 4x^4 + x^2 - 9x - 8$$

Express the sum of  $p(x) + q(x)$  in standard form.

2. Let polynomials  $a(x)$  and  $b(x)$  be defined below.

$$a(x) = 4x^2 - 6x + 5$$

$$b(x) = -7x - 9$$

Express the product  $a(x) \cdot b(x)$  in standard form.

3. Express  $(x + 1)^4$  in standard (expanded) form.

## Polynomial Operations EXAM (version 146)

4. Let polynomials  $f(x)$  and  $g(x)$  be defined below.

$$\begin{aligned}f(x) &= x^3 - 6x^2 - 26x - 6 \\g(x) &= x - 9\end{aligned}$$

The quotient of  $\frac{f(x)}{g(x)}$  can be expressed as a polynomial,  $h(x)$ , and a remainder,  $R$  (a real number).

$$\frac{f(x)}{g(x)} = h(x) + \frac{R}{x - 9}$$

By using synthetic division or long division, express  $h(x)$  in standard form, and find the remainder  $R$ .

5. Let polynomial  $f(x)$  still be defined as  $f(x) = x^3 - 6x^2 - 26x - 6$ . Evaluate  $f(9)$ .

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Polynomial Operations EXAM (version 147)

1. Let polynomials  $p(x)$  and  $q(x)$  be defined below.

$$p(x) = -2x^5 + 9x^3 - 3x^2 - 6x + 7$$

$$q(x) = 7x^5 - x^4 - 2x^3 + 6x - 4$$

Express the difference  $p(x) - q(x)$  in standard form.

2. Let polynomials  $a(x)$  and  $b(x)$  be defined below.

$$a(x) = -6x^2 - 5x - 7$$

$$b(x) = -2x - 9$$

Express the product  $a(x) \cdot b(x)$  in standard form.

3. Express  $(x + 1)^6$  in standard (expanded) form.

## Polynomial Operations EXAM (version 147)

4. Let polynomials  $f(x)$  and  $g(x)$  be defined below.

$$\begin{aligned}f(x) &= -3x^3 - 23x^2 + 6x - 10 \\g(x) &= x + 8\end{aligned}$$

The quotient of  $\frac{f(x)}{g(x)}$  can be expressed as a polynomial,  $h(x)$ , and a remainder,  $R$  (a real number).

$$\frac{f(x)}{g(x)} = h(x) + \frac{R}{x + 8}$$

By using synthetic division or long division, express  $h(x)$  in standard form, and find the remainder  $R$ .

5. Let polynomial  $f(x)$  still be defined as  $f(x) = -3x^3 - 23x^2 + 6x - 10$ . Evaluate  $f(-8)$ .

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Polynomial Operations EXAM (version 148)

1. Let polynomials  $p(x)$  and  $q(x)$  be defined below.

$$p(x) = 3x^5 - x^4 + 2x^3 - 6x - 5$$

$$q(x) = 8x^5 - 3x^3 - 5x^2 - 2x - 9$$

Express the difference  $q(x) - p(x)$  in standard form.

2. Let polynomials  $a(x)$  and  $b(x)$  be defined below.

$$a(x) = 2x^2 + 7x + 6$$

$$b(x) = 7x - 9$$

Express the product  $a(x) \cdot b(x)$  in standard form.

3. Express  $(x + 1)^4$  in standard (expanded) form.

## Polynomial Operations EXAM (version 148)

4. Let polynomials  $f(x)$  and  $g(x)$  be defined below.

$$\begin{aligned}f(x) &= 4x^3 - 29x^2 + 4x + 26 \\g(x) &= x - 7\end{aligned}$$

The quotient of  $\frac{f(x)}{g(x)}$  can be expressed as a polynomial,  $h(x)$ , and a remainder,  $R$  (a real number).

$$\frac{f(x)}{g(x)} = h(x) + \frac{R}{x - 7}$$

By using synthetic division or long division, express  $h(x)$  in standard form, and find the remainder  $R$ .

5. Let polynomial  $f(x)$  still be defined as  $f(x) = 4x^3 - 29x^2 + 4x + 26$ . Evaluate  $f(7)$ .

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Polynomial Operations EXAM (version 149)

1. Let polynomials  $p(x)$  and  $q(x)$  be defined below.

$$p(x) = -7x^5 + 8x^4 + 4x^3 - 9x^2 - 3$$

$$q(x) = -6x^5 - 3x^4 - x^2 + 8x + 7$$

Express the difference  $p(x) - q(x)$  in standard form.

2. Let polynomials  $a(x)$  and  $b(x)$  be defined below.

$$a(x) = -9x^2 + 3x + 2$$

$$b(x) = 7x + 4$$

Express the product  $a(x) \cdot b(x)$  in standard form.

3. Express  $(x + 1)^4$  in standard (expanded) form.

## Polynomial Operations EXAM (version 149)

4. Let polynomials  $f(x)$  and  $g(x)$  be defined below.

$$\begin{aligned}f(x) &= x^3 + 6x^2 - 12x + 27 \\g(x) &= x + 8\end{aligned}$$

The quotient of  $\frac{f(x)}{g(x)}$  can be expressed as a polynomial,  $h(x)$ , and a remainder,  $R$  (a real number).

$$\frac{f(x)}{g(x)} = h(x) + \frac{R}{x+8}$$

By using synthetic division or long division, express  $h(x)$  in standard form, and find the remainder  $R$ .

5. Let polynomial  $f(x)$  still be defined as  $f(x) = x^3 + 6x^2 - 12x + 27$ . Evaluate  $f(-8)$ .

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Polynomial Operations EXAM (version 150)

1. Let polynomials  $p(x)$  and  $q(x)$  be defined below.

$$p(x) = 3x^5 - x^4 - 10x^3 - 5x + 6$$

$$q(x) = -2x^5 + 7x^4 + 9x^2 + x + 5$$

Express the sum of  $p(x) + q(x)$  in standard form.

2. Let polynomials  $a(x)$  and  $b(x)$  be defined below.

$$a(x) = -6x^2 + 7x + 5$$

$$b(x) = 3x + 7$$

Express the product  $a(x) \cdot b(x)$  in standard form.

3. Express  $(x + 1)^6$  in standard (expanded) form.

## Polynomial Operations EXAM (version 150)

4. Let polynomials  $f(x)$  and  $g(x)$  be defined below.

$$\begin{aligned}f(x) &= x^3 - 2x^2 - 26x + 22 \\g(x) &= x - 6\end{aligned}$$

The quotient of  $\frac{f(x)}{g(x)}$  can be expressed as a polynomial,  $h(x)$ , and a remainder,  $R$  (a real number).

$$\frac{f(x)}{g(x)} = h(x) + \frac{R}{x - 6}$$

By using synthetic division or long division, express  $h(x)$  in standard form, and find the remainder  $R$ .

5. Let polynomial  $f(x)$  still be defined as  $f(x) = x^3 - 2x^2 - 26x + 22$ . Evaluate  $f(6)$ .

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Polynomial Operations EXAM (version 151)

1. Let polynomials  $p(x)$  and  $q(x)$  be defined below.

$$p(x) = -x^5 + 4x^4 + 8x^2 - 3x + 10$$

$$q(x) = 2x^5 - 6x^3 - 5x^2 + 4x + 1$$

Express the sum of  $p(x) + q(x)$  in standard form.

2. Let polynomials  $a(x)$  and  $b(x)$  be defined below.

$$a(x) = 7x^2 + 5x + 4$$

$$b(x) = 3x - 5$$

Express the product  $a(x) \cdot b(x)$  in standard form.

3. Express  $(x + 1)^5$  in standard (expanded) form.

## Polynomial Operations EXAM (version 151)

4. Let polynomials  $f(x)$  and  $g(x)$  be defined below.

$$\begin{aligned}f(x) &= -2x^3 + 15x^2 - 6x + 1 \\g(x) &= x - 7\end{aligned}$$

The quotient of  $\frac{f(x)}{g(x)}$  can be expressed as a polynomial,  $h(x)$ , and a remainder,  $R$  (a real number).

$$\frac{f(x)}{g(x)} = h(x) + \frac{R}{x - 7}$$

By using synthetic division or long division, express  $h(x)$  in standard form, and find the remainder  $R$ .

5. Let polynomial  $f(x)$  still be defined as  $f(x) = -2x^3 + 15x^2 - 6x + 1$ . Evaluate  $f(7)$ .

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Polynomial Operations EXAM (version 152)

1. Let polynomials  $p(x)$  and  $q(x)$  be defined below.

$$p(x) = -9x^5 - 4x^3 - x^2 - 2x + 7$$

$$q(x) = 7x^5 - 2x^4 + x^2 + 8x + 3$$

Express the difference  $q(x) - p(x)$  in standard form.

2. Let polynomials  $a(x)$  and  $b(x)$  be defined below.

$$a(x) = -3x^2 - 2x + 4$$

$$b(x) = -3x + 8$$

Express the product  $a(x) \cdot b(x)$  in standard form.

3. Express  $(x + 1)^6$  in standard (expanded) form.

## Polynomial Operations EXAM (version 152)

4. Let polynomials  $f(x)$  and  $g(x)$  be defined below.

$$\begin{aligned}f(x) &= 2x^3 + 15x^2 + 19x - 29 \\g(x) &= x + 5\end{aligned}$$

The quotient of  $\frac{f(x)}{g(x)}$  can be expressed as a polynomial,  $h(x)$ , and a remainder,  $R$  (a real number).

$$\frac{f(x)}{g(x)} = h(x) + \frac{R}{x+5}$$

By using synthetic division or long division, express  $h(x)$  in standard form, and find the remainder  $R$ .

5. Let polynomial  $f(x)$  still be defined as  $f(x) = 2x^3 + 15x^2 + 19x - 29$ . Evaluate  $f(-5)$ .

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Polynomial Operations EXAM (version 153)

1. Let polynomials  $p(x)$  and  $q(x)$  be defined below.

$$p(x) = 3x^5 - 8x^4 - 9x^3 - 5x - 10$$

$$q(x) = 9x^5 - 10x^4 - 8x^2 - x - 2$$

Express the difference  $p(x) - q(x)$  in standard form.

2. Let polynomials  $a(x)$  and  $b(x)$  be defined below.

$$a(x) = -6x^2 - 9x - 3$$

$$b(x) = -5x + 2$$

Express the product  $a(x) \cdot b(x)$  in standard form.

3. Express  $(x + 1)^4$  in standard (expanded) form.

## Polynomial Operations EXAM (version 153)

4. Let polynomials  $f(x)$  and  $g(x)$  be defined below.

$$\begin{aligned}f(x) &= x^3 - 11x^2 + 28x + 4 \\g(x) &= x - 7\end{aligned}$$

The quotient of  $\frac{f(x)}{g(x)}$  can be expressed as a polynomial,  $h(x)$ , and a remainder,  $R$  (a real number).

$$\frac{f(x)}{g(x)} = h(x) + \frac{R}{x - 7}$$

By using synthetic division or long division, express  $h(x)$  in standard form, and find the remainder  $R$ .

5. Let polynomial  $f(x)$  still be defined as  $f(x) = x^3 - 11x^2 + 28x + 4$ . Evaluate  $f(7)$ .

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Polynomial Operations EXAM (version 154)

1. Let polynomials  $p(x)$  and  $q(x)$  be defined below.

$$p(x) = -4x^5 - 8x^4 - x^3 + 3x^2 + 9$$

$$q(x) = x^5 + 4x^4 + 6x^2 + 2x + 3$$

Express the difference  $p(x) - q(x)$  in standard form.

2. Let polynomials  $a(x)$  and  $b(x)$  be defined below.

$$a(x) = -6x^2 - 7x + 5$$

$$b(x) = 2x - 3$$

Express the product  $a(x) \cdot b(x)$  in standard form.

3. Express  $(x + 1)^6$  in standard (expanded) form.

## Polynomial Operations EXAM (version 154)

4. Let polynomials  $f(x)$  and  $g(x)$  be defined below.

$$\begin{aligned}f(x) &= 4x^3 + 24x^2 - 3x - 15 \\g(x) &= x + 6\end{aligned}$$

The quotient of  $\frac{f(x)}{g(x)}$  can be expressed as a polynomial,  $h(x)$ , and a remainder,  $R$  (a real number).

$$\frac{f(x)}{g(x)} = h(x) + \frac{R}{x+6}$$

By using synthetic division or long division, express  $h(x)$  in standard form, and find the remainder  $R$ .

5. Let polynomial  $f(x)$  still be defined as  $f(x) = 4x^3 + 24x^2 - 3x - 15$ . Evaluate  $f(-6)$ .

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Polynomial Operations EXAM (version 155)

1. Let polynomials  $p(x)$  and  $q(x)$  be defined below.

$$p(x) = 10x^5 + 9x^4 - x^2 + 4x + 6$$

$$q(x) = -8x^5 - 7x^4 - 3x^3 + 5x^2 + 2$$

Express the difference  $q(x) - p(x)$  in standard form.

2. Let polynomials  $a(x)$  and  $b(x)$  be defined below.

$$a(x) = -6x^2 + 3x - 7$$

$$b(x) = 8x - 4$$

Express the product  $a(x) \cdot b(x)$  in standard form.

3. Express  $(x + 1)^5$  in standard (expanded) form.

## Polynomial Operations EXAM (version 155)

4. Let polynomials  $f(x)$  and  $g(x)$  be defined below.

$$\begin{aligned}f(x) &= 2x^3 + 14x^2 + 24x + 24 \\g(x) &= x + 5\end{aligned}$$

The quotient of  $\frac{f(x)}{g(x)}$  can be expressed as a polynomial,  $h(x)$ , and a remainder,  $R$  (a real number).

$$\frac{f(x)}{g(x)} = h(x) + \frac{R}{x+5}$$

By using synthetic division or long division, express  $h(x)$  in standard form, and find the remainder  $R$ .

5. Let polynomial  $f(x)$  still be defined as  $f(x) = 2x^3 + 14x^2 + 24x + 24$ . Evaluate  $f(-5)$ .

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Polynomial Operations EXAM (version 156)

1. Let polynomials  $p(x)$  and  $q(x)$  be defined below.

$$p(x) = 5x^5 + 4x^4 + 3x^3 + 10x^2 + 8$$

$$q(x) = 9x^5 - 8x^4 + 4x^3 - 10x - 5$$

Express the difference  $p(x) - q(x)$  in standard form.

2. Let polynomials  $a(x)$  and  $b(x)$  be defined below.

$$a(x) = -4x^2 - 5x - 7$$

$$b(x) = 3x + 8$$

Express the product  $a(x) \cdot b(x)$  in standard form.

3. Express  $(x + 1)^4$  in standard (expanded) form.

## Polynomial Operations EXAM (version 156)

4. Let polynomials  $f(x)$  and  $g(x)$  be defined below.

$$\begin{aligned}f(x) &= 5x^3 - 25x^2 - 4x + 22 \\g(x) &= x - 5\end{aligned}$$

The quotient of  $\frac{f(x)}{g(x)}$  can be expressed as a polynomial,  $h(x)$ , and a remainder,  $R$  (a real number).

$$\frac{f(x)}{g(x)} = h(x) + \frac{R}{x - 5}$$

By using synthetic division or long division, express  $h(x)$  in standard form, and find the remainder  $R$ .

5. Let polynomial  $f(x)$  still be defined as  $f(x) = 5x^3 - 25x^2 - 4x + 22$ . Evaluate  $f(5)$ .

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Polynomial Operations EXAM (version 157)

1. Let polynomials  $p(x)$  and  $q(x)$  be defined below.

$$p(x) = -8x^5 - 10x^3 - 7x^2 + x + 2$$

$$q(x) = 3x^5 + 5x^4 - 10x^2 + 2x - 7$$

Express the difference  $p(x) - q(x)$  in standard form.

2. Let polynomials  $a(x)$  and  $b(x)$  be defined below.

$$a(x) = 9x^2 - 4x - 5$$

$$b(x) = 2x - 3$$

Express the product  $a(x) \cdot b(x)$  in standard form.

3. Express  $(x + 1)^5$  in standard (expanded) form.

## Polynomial Operations EXAM (version 157)

4. Let polynomials  $f(x)$  and  $g(x)$  be defined below.

$$\begin{aligned}f(x) &= -5x^3 + 18x^2 + 13x - 25 \\g(x) &= x - 4\end{aligned}$$

The quotient of  $\frac{f(x)}{g(x)}$  can be expressed as a polynomial,  $h(x)$ , and a remainder,  $R$  (a real number).

$$\frac{f(x)}{g(x)} = h(x) + \frac{R}{x - 4}$$

By using synthetic division or long division, express  $h(x)$  in standard form, and find the remainder  $R$ .

5. Let polynomial  $f(x)$  still be defined as  $f(x) = -5x^3 + 18x^2 + 13x - 25$ . Evaluate  $f(4)$ .

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Polynomial Operations EXAM (version 158)

1. Let polynomials  $p(x)$  and  $q(x)$  be defined below.

$$p(x) = 8x^5 - 6x^3 + 9x^2 - 4x - 10$$

$$q(x) = 4x^5 + 10x^4 - 7x^3 + 6x - 9$$

Express the sum of  $p(x) + q(x)$  in standard form.

2. Let polynomials  $a(x)$  and  $b(x)$  be defined below.

$$a(x) = 6x^2 + 3x - 7$$

$$b(x) = 5x + 9$$

Express the product  $a(x) \cdot b(x)$  in standard form.

3. Express  $(x + 1)^5$  in standard (expanded) form.

## Polynomial Operations EXAM (version 158)

4. Let polynomials  $f(x)$  and  $g(x)$  be defined below.

$$\begin{aligned}f(x) &= 2x^3 - 7x^2 - 15x - 10 \\g(x) &= x - 5\end{aligned}$$

The quotient of  $\frac{f(x)}{g(x)}$  can be expressed as a polynomial,  $h(x)$ , and a remainder,  $R$  (a real number).

$$\frac{f(x)}{g(x)} = h(x) + \frac{R}{x - 5}$$

By using synthetic division or long division, express  $h(x)$  in standard form, and find the remainder  $R$ .

5. Let polynomial  $f(x)$  still be defined as  $f(x) = 2x^3 - 7x^2 - 15x - 10$ . Evaluate  $f(5)$ .

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Polynomial Operations EXAM (version 159)

1. Let polynomials  $p(x)$  and  $q(x)$  be defined below.

$$p(x) = -8x^5 - 10x^4 - 9x^3 + 7x + 1$$

$$q(x) = 10x^5 + 2x^4 - 3x^3 + 4x^2 - 7$$

Express the difference  $p(x) - q(x)$  in standard form.

2. Let polynomials  $a(x)$  and  $b(x)$  be defined below.

$$a(x) = 7x^2 - 6x - 3$$

$$b(x) = -7x + 2$$

Express the product  $a(x) \cdot b(x)$  in standard form.

3. Express  $(x + 1)^6$  in standard (expanded) form.

## Polynomial Operations EXAM (version 159)

4. Let polynomials  $f(x)$  and  $g(x)$  be defined below.

$$\begin{aligned}f(x) &= 2x^3 + 17x^2 + 10x + 14 \\g(x) &= x + 8\end{aligned}$$

The quotient of  $\frac{f(x)}{g(x)}$  can be expressed as a polynomial,  $h(x)$ , and a remainder,  $R$  (a real number).

$$\frac{f(x)}{g(x)} = h(x) + \frac{R}{x+8}$$

By using synthetic division or long division, express  $h(x)$  in standard form, and find the remainder  $R$ .

5. Let polynomial  $f(x)$  still be defined as  $f(x) = 2x^3 + 17x^2 + 10x + 14$ . Evaluate  $f(-8)$ .

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Polynomial Operations EXAM (version 160)

1. Let polynomials  $p(x)$  and  $q(x)$  be defined below.

$$p(x) = -9x^5 + 3x^4 + 7x^2 - x + 2$$

$$q(x) = 4x^5 + 7x^3 - 8x^2 - x + 10$$

Express the difference  $p(x) - q(x)$  in standard form.

2. Let polynomials  $a(x)$  and  $b(x)$  be defined below.

$$a(x) = -9x^2 - 6x - 4$$

$$b(x) = -7x - 2$$

Express the product  $a(x) \cdot b(x)$  in standard form.

3. Express  $(x + 1)^4$  in standard (expanded) form.

## Polynomial Operations EXAM (version 160)

4. Let polynomials  $f(x)$  and  $g(x)$  be defined below.

$$\begin{aligned}f(x) &= -2x^3 + 20x^2 - 28x - 28 \\g(x) &= x - 8\end{aligned}$$

The quotient of  $\frac{f(x)}{g(x)}$  can be expressed as a polynomial,  $h(x)$ , and a remainder,  $R$  (a real number).

$$\frac{f(x)}{g(x)} = h(x) + \frac{R}{x - 8}$$

By using synthetic division or long division, express  $h(x)$  in standard form, and find the remainder  $R$ .

5. Let polynomial  $f(x)$  still be defined as  $f(x) = -2x^3 + 20x^2 - 28x - 28$ . Evaluate  $f(8)$ .